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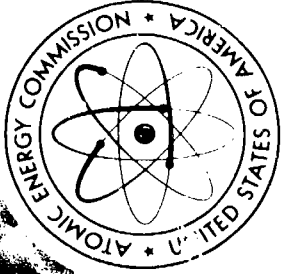
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TECHNICAL ENERGY
1581/65
29 NOV 1965
DEFENSE ATOMIC
SUPPORT AGENCY

XRD-53

AEC RESEARCH AND DEVELOPMENT REPORT

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TECHNICAL INSPECTION REPORT

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U.S.S. PARCHE (SS384)

TEST ABLE

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OPERATION CROSSROADS

DIRECTOR OF SHIP MATERIAL
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SUBMITTED:

This report is submitted to the C. L. GAASTERLAND,
Commander, U.S.N.
in accordance with the provisions of the
Atomic Energy Act of 1946.

APPROVED:

F. X. Forest,
Captain, U.S.N.

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by *John A. Hyatt H.A.C.T. 1/14/60* Date *MAY 18 1952*

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U.S.S. PARCHE (SS384)

SHIP CHARACTERISTICS

Building Yard: Portsmouth Naval Shipyard.

Commissioned: 20 November 1943.

HULL

Heavy Hull Construction.

Length Overall: 311 feet 8 1/2 inches.

Length Between Perpendiculars: 307 feet 0 1/2 inch.

Beam (extreme): 27 feet 3 1/4 inches.

Beam (molded): 27 feet 1 3/4 inches.

Height: (Lowest point of keel to top of periscope

Supports) 47 feet 3 1/2 inches.

Drafts at time of test: Fwd. 16 feet 3 inches.

Aft. 16 feet 4 inches.

Standard Displacement: 1525 tons.

Displacement at time of test: 1966 tons.

MAIN PROPULSION PLANT

Main Engines: Four Fairbanks Morse 10 cylinder
type 38D8 diesels.

Auxiliary Engine: Fairbanks Morse 7 cylinder,
type 38D5 diesel.

Main Motors and Generators: Elliott.

Main Storage Battery: Exide.

Main Control: Westinghouse.

Reduction Gears: Westinghouse.

Diesel Electric Drive.

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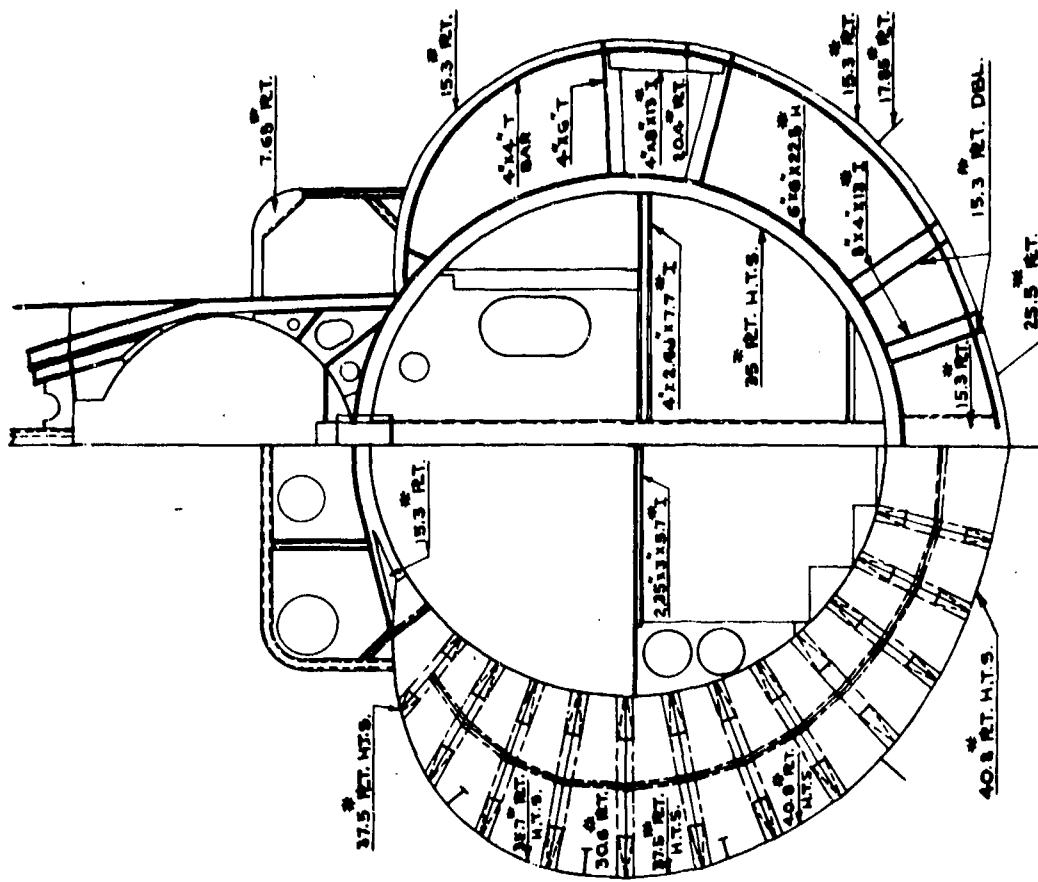
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TYPICAL SECT. AT FR. 69
LOOKING AFT

TYPICAL SECT. AT FR.53
LOOKING FORD.

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TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

Draft and list were normal after the test; no flooding occurred.

(b) Structural damage.

There was no hull damage other than paint scorching on the port side, a very slight dishing of some 5 pound plating on the port side of the conning tower fairwater, and the blowing in of a small (24" x 20") access door in the same plating.

(c) Other damage.

Machinery, electrical, ship control, fire control and electronic equipment was undamaged and fully operable after the test. The PARCHE was one of the vessels selected to have certain electronic and fire control equipment in operation during the test. This was accomplished by taking power from the after battery through special timing relays as discussed in the Electrical Section of this report.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Momentary extreme heat is evidenced by heavily scorched and blistered paint on surfaces toward the blast.

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The flash apparently came from 270° relative. The top coat of paint on the exposed vertical surfaces of the port side of the superstructure and conning tower fairwater is moderately scorched. On this ship there is also evidence of reflected heat. That is, some vertical surfaces (such as the inboard side of the port bridge bulwark), which face 180° away from the explosion, are scorched. The paint scorching is only one coat deep but is slightly more severe than on other submarines nearer the center of the explosion. This is probably due to the fact that the ship (hence most vertical surfaces) lay almost perpendicular to the direction of propagation of the heat wave, whereas other submarines lay at an oblique angle. On this ship, a few horizontal under surfaces are also scorched, but most of the scorching is confined to vertical surfaces. See photographs on pages 30 to 35. Topsides cables in some few instances had a light covering of char or soot which could not be rubbed off with the fingers, but in no case was the insulation damaged.

(b) Fires and explosions.

No fires or explosions occurred.

(c) Shock.

There is no evidence of shock.

(d) Pressure.

Slight dishing of the port side of the conning tower fairwater plating indicates that a dynamic pressure wave struck the port side. The "Coordinators Report on Air Blast and Water Shock, Tests Able and Baker" of 27 September, indicates that the peak pressure was approximately 6.8 lbs. per square inch and the duration of the positive pressure phase in the order of 0.88 seconds.

Elastic distortion of the hull, measured at four stations, was not greater than 0.04 inches.

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(e) Effects apparently peculiar to the atom bomb.

Heat, pressure and slight radioactivity were the only noted effects peculiar to the atom bomb.

III. Effects of Damage.

(a) Effect on machinery, electrical, and ship control.

None.

(b) Effect on gunnery and fire control.

None.

(c) Effect on water-tight integrity and stability.

None.

(d) Effect on personnel and habitability.

It is believed there would have been no effect on personnel inside the sealed pressure hull. Habitability was unimpaired. It is estimated that topside personnel would have suffered severe flash burns.

(e) Total effect on fighting efficiency.

There was no reduction in fighting efficiency from a material standpoint. Exposed topside personnel would have been at least temporarily out of action.

IV. General Summary of Observers' Impressions and Conclusions.

The PARCHE had been moored on the surface at a distance of approximately 3000 yards from the center of the blast. From inspection, the impression formed is that this ship was subjected to a directional flash of more or less instantaneous

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heat followed by a relatively high velocity wind. It is concluded that a submarine on the surface this distance from an explosion of the type experienced in Test A will not be affected from a material standpoint but would have casualties among exposed topside personnel. Had the submarine been submerged, there would have been no damage and no casualties.

V. Preliminary General or Specific Recommendations of Inspection Group.

If it is expected that submarines will be subjected to such an attack it appears desirable to protect topside personnel to the maximum practicable extent with clothing and structural enclosures. As there is no significant material damage to this vessel no further recommendations are submitted herein.

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in draft or list.

(b) Structural damage.

There is no hull damage other than paint scorching on the port side, a very slight dishing of some 5 pound plating on the port side of the conning tower fairwater and the blowing in of a small (24" x 20") access door in the same 5 pound plating.

(c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

The flash apparently came from 270° relative. The top coat of paint on the exposed vertical surfaces of the port side of the superstructure and conning tower fairwater is moderately scorched. On this ship there is also evidence of reflected heat. That is, some vertical surfaces (such as the inboard side of the port bridge bulwark), which face 180° away from the explosion, are scorched. The paint scorching is only one coat deep but is slightly more severe than on other submarines nearer the center of the explosion. This is probably due to the fact that the ship (hence most vertical surfaces) lay almost perpendicular to the direction

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of propagation of the heat wave, whereas other submarines lay at an oblique angle. On this ship a few horizontal, under surfaces are also scorched, but most of the scorching is confined to vertical surfaces.

(b) Fires and explosions.

None.

(c) Shock.

No evidence.

(d) Pressure.

Slight dishing of the port side of the conning tower fairwater plating indicates that a dynamic pressure wave struck the port side. The "Coordinators Report on Air Blast and Water Shock, Tests A and B" of 27 September, indicates that the peak pressure was approximately 8.8 lbs per square inch and the duration of the positive pressure phase in the order of 0.69 seconds.

Elastic distortion of the hull, measured at four stations, was not greater than 0.04 inches.

(e) Effects apparently peculiar to the atom bomb.

None other than previously noted.

III. Effects of Damage.

(a) Effect on machinery, electrical and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

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(c) Effect on water-tight integrity and stability.

None.

(d) Effect on personnel and habitability.

Insofar as hull structure is concerned there is no effect on habitability. It is estimated that topside personnel would have suffered severe flash burns.

(e) Effect on fighting efficiency.

None.

IV. General Summary of Observers' Impressions and Conclusions.

From inspection, the impression formed is that this ship was subjected to a directional flash of more or less instantaneous heat followed by a relatively high velocity wind. It is concluded that a submarine on the surface at such distance from an explosion of the type experienced in Test A will not be affected as far as hull material condition is concerned.

V. Preliminary General or Specific Recommendations of Inspection Group.

If it is expected that submarines will be subjected to such an attack it appears desirable to protect topside personnel to the maximum practicable extent with clothing and structural enclosures. As there is no significant material damage to this vessel no further recommendations are submitted herein.

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DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

No damage except as covered in B and T.

B. Superstructure.

There is a very slight dishing of some 5 pound plating on the port side of the conning tower fairwater. A 20" x 24" access door in the same 5 pound plating was blown in and distorted. There is no other damage.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

No damage.

E. Weather Deck.

No damage.

F. Exterior Hull.

No damage.

G. Interior Compartments (above w.l.).

No damage.

H. Armor Decks and Miscellaneous Armor.

Not applicable.

I. Interior Compartments (below w.l.).

No damage.

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J. Underwater Hull.

No damage.

K. Tanks.

No damage.

L. Flooding.

None.

M. Ventilation.

No damage.

N. Ship Control.

No damage.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage.

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

S. Miscellaneous.

No comment.

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T. Coverings.

The top coat of paint on the exposed vertical surface of the port side of the superstructure and conning tower fairwater is moderately scorched and charred. The scorching is slightly more severe than on other submarines nearer to the explosion. This is probably due to the fact that the ship (hence most vertical surfaces) lay almost perpendicular to the direction of propagation of the heat wave, whereas other submarines lay at an oblique angle.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

Draft and list were normal; no flooding occurred.

(b) Structural damage.

No structural damage was experienced.

(c) Other damage.

All machinery and equipment undamaged and operable.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Momentary extreme heat from the direction of the bomb burst is evidenced by heavily scorched and blistered paint on vertical surfaces toward the burst.

(b) Fires and explosions.

No fires or explosions occurred aboard.

(c) Shock.

No indication of shock was evidenced.

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V. Preliminary Recommendation.

No comment.

(d) Pressure.

None evidenced.

(e) Effects apparently peculiar to the atom bomb.

Slight radioactivity and heat were only noted effects peculiar to the atom bomb.

III. Effects of Damage.

(a) Effect on machinery and ship control.

None. No damage.

(b) Effect on gunnery and fire control.

None. No damage.

(c) Effect on water-tight integrity and stability.

None. No damage.

(d) Effect on personnel and habitability.

It is believed there would have been no effect on personnel inside the sealed pressure hull. Habitability was unimpaired.

(e) Total effect on fighting efficiency.

None to material. Any personnel topside would have been at least temporarily out of action.

IV. General Summary.

It is apparent that a submarine sealed up as for diving and rigged for depth charge attack yet still on the surface would be undamaged by an air burst of an atomic bomb of similar strength and at similar range as the Test A bomb.

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DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

- (a) Overall condition.
Undamaged.
- (b) Areas of major damage.
No damage.
- (c) Primary cause of damage in each area of major damage.
No damage.
- (d) Effect of target test on overall operation of machinery plant.
None. All equipment was operated under service conditions with vessel underway. Diving equipment was tested by stationary test dive.

B. Boilers.

Not applicable.

C. Blowers.

Not applicable.

D. Fuel Oil Equipment.

No damage.

E. Boiler Feedwater Equipment.

Not applicable.

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F. Main Propulsion Machinery.

No damage.

G. Reduction Gears.

No damage.

H. Shafting and Bearings.

No damage.

I. Lubrication System.

No damage.

J. Condensers and Air Ejectors.

Not applicable.

K. Pumps.

No damage.

L. Auxiliary Generators (Turbines and Gears).

Discussed under F.

M. Propellers.

No damage.

N. Distilling Plant.

No damage.

O. Refrigeration Plant.

No damage.

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P. Winches, Windlasses, and Capstans.

No damage.

Q. Steering Engine.

No damage.

R. Elevators, Ammunition Hoists, etc.

Not applicable.

S. Ventilation (Machinery).

No damage.

T. Compressed Air Plant.

No damage.

U. Diesels (Generators and Boats).

Not applicable. See F.

V. Piping Systems.

No damage.

W. Hydraulic System.

No damage.

X. Navigational Instruments.

No damage.

Y. Periscopes.

No damage.

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Z. Radar and Sonar.

No damage.

AA. Miscellaneous.

None.

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TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

Not observed.

(b) Structural damage.

None.

(c) Other damage.

No electrical equipment was damaged or inoperable due to the test.

II. Forces Evidenced and Effects Noted.

(a) Heat.

There was no evidence of heat having affected any equipment inside the pressure hull. On the topside, charring of paint on vertical surfaces of the superstructure had occurred along the port side. Topside cables in some few instances, when completely exposed, had a light covering of char or soot which could be rubbed off with the fingers, but in no case was the insulation damaged at all.

(b) Fires and explosions.

None.

(c) Shock.

There was no evidence of shock damage.

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(d) Pressure.

There was no evidence of pressure damage.

(e) Any effects apparently peculiar to the atom bomb.

Other than slight radioactivity, the charring of the ship's superstructure on the side toward the blast is the only phenomenon noted that may be considered peculiar to the atom bomb.

III. Effects of Damage.

(a) Effect on propulsion and ship control.

None.

(b) Effect on gunnery and fire control.

None.

(c) Effect on water-tight integrity and stability.

Not observed.

(d) Effect on personnel and habitability.

None except for possible radiological effects and probable heat or blast effects on exposed personnel.

(e) Total effect on fighting efficiency.

None.

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IV. General Summary of Observers' Impressions and Conclusions.

There was no effect from the atom bomb on electrical equipment in this ship. It is considered that, for a submarine, even on the surface, this ship was outside the range of damage by the atom bomb.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

None.

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DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

No damage to electrical equipment.

(b) Areas of major damage.

None.

(c) Primary causes of damage in each area of major damage.

None.

(d) Effect of target test on overall operation of electric plant.

The operability of the electric plant was in no way impaired, either directly or indirectly, by the atom bomb.

(e) Types of equipment most affected.

None.

B. Electric Propulsion Rotating Equipment.

No damage.

C. Electric Propulsion Control Equipment.

No damage.

D. Generators - Ships Service.

Not applicable.

E. Generators - Emergency.

Not applicable.

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F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage. Topsides cables in some few instances, where completely exposed, suffered slight scorching of paint, but in no case was the insulation damaged.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

No damage. Batteries were fully charged prior to the test. The after battery was used to supply power for electronic equipment during the test. Analysis of electrolyte samples after the test by Pearl Harbor Naval Shipyard revealed no significant changes attributable to the atom bomb.

J. Portable Batteries.

Not applicable.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage.

M. Searchlights.

No damage.

N. Degaussing Equipment.

Not applicable.

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O. Gyro Compass Equipment.

No damage.

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

Not applicable.

R. Announcing Systems.

No damage.

S. Telegraphs.

No damage.

T. Indicating Systems.

No damage.

U. I.C. and A.C.O. Switchboards.

No damage.

V. F.C. Switchboard.

No damage.

W. Miscellaneous.

In order to permit operating radar, sonar and fire control equipment during the test, two special timing relays were installed temporarily on the propulsion control cubicle, as shown in photographs on page 36. These relays were connected to de-energize automatically the after auxiliary power circuit breaker. Shortly prior to the test, the after auxiliary power circuit

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breaker was closed so as to obtain power from the after battery, and the timing relays were set. Two I.C. motor-generator sets, and the radar, sonar and fire control equipment were placed in operation.

The timing relays functioned automatically after eleven hours of operation and all equipment which was in operation during the test was automatically secured.

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SECTION IV

PHOTOGRAPHS

TEST ABLE



BB-CR-227-513-30. General view of bow, showing scorching of paint on the port side forward.

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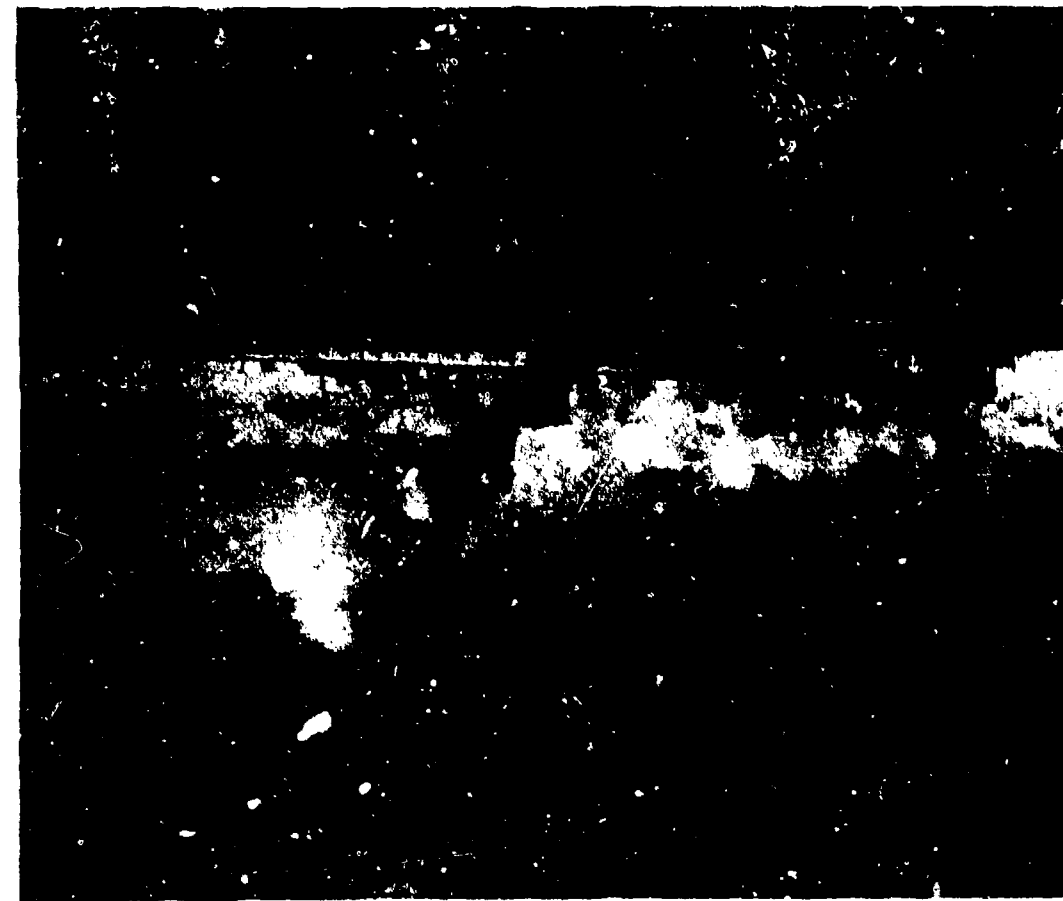
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BB-CR-227-513-37. General view of port bow, showing darker, scorched paint areas.

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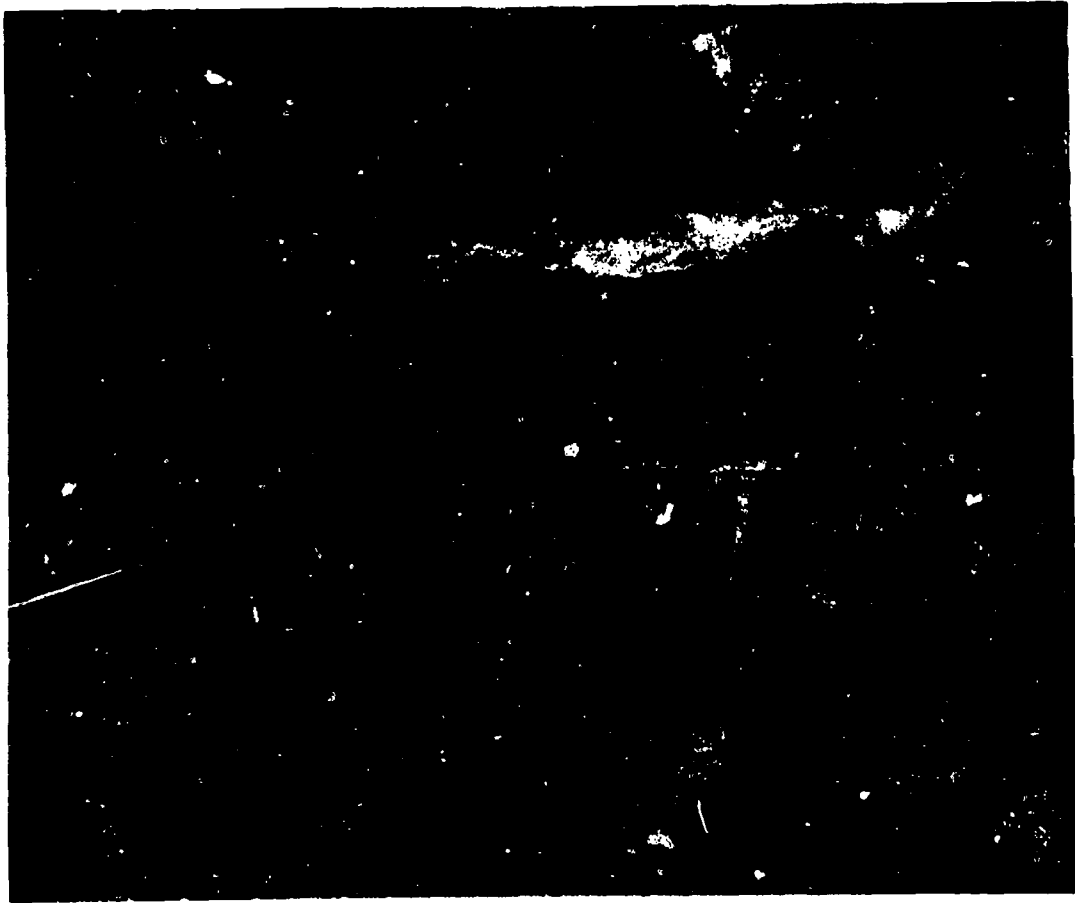
BB-CR-227-513-36. General view of port bow, showing darker, scorched paint areas.

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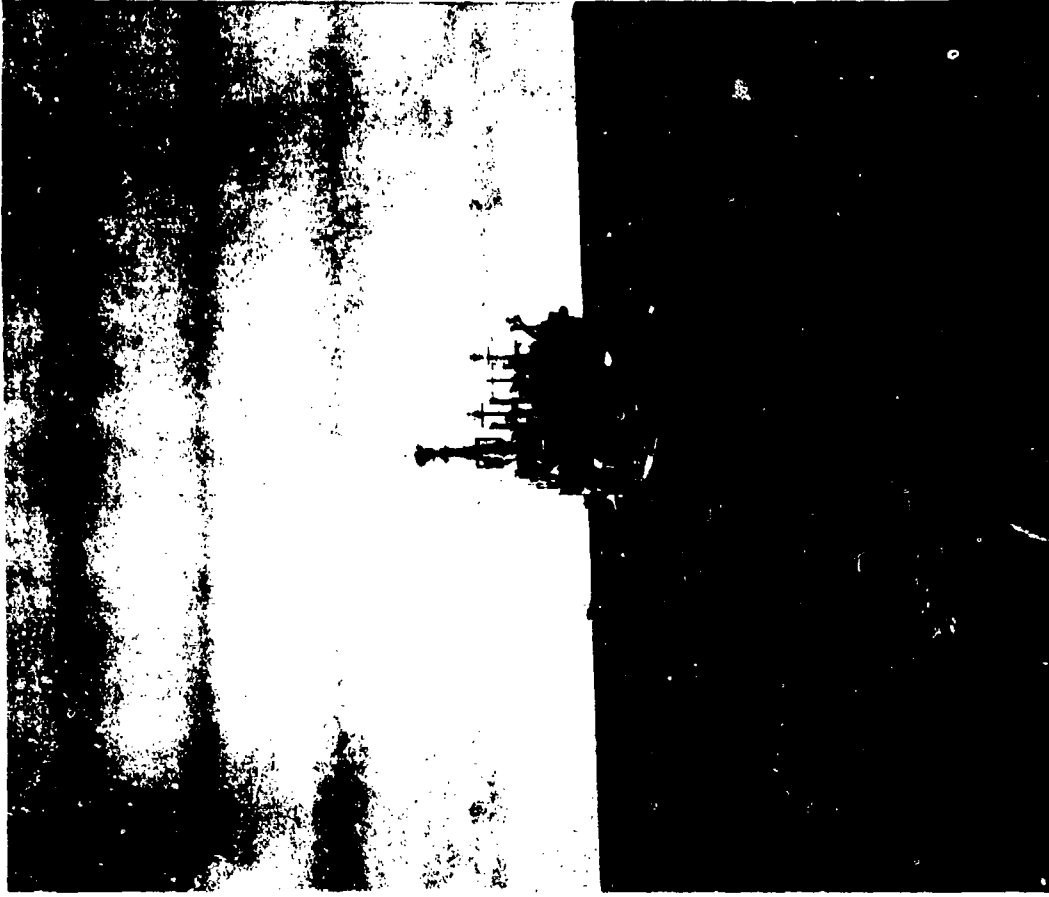
BB-CR-227-513-35. General view of port quarter showing darkened scorched paint areas.

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BB-CR-227-513-34. General view of stern.

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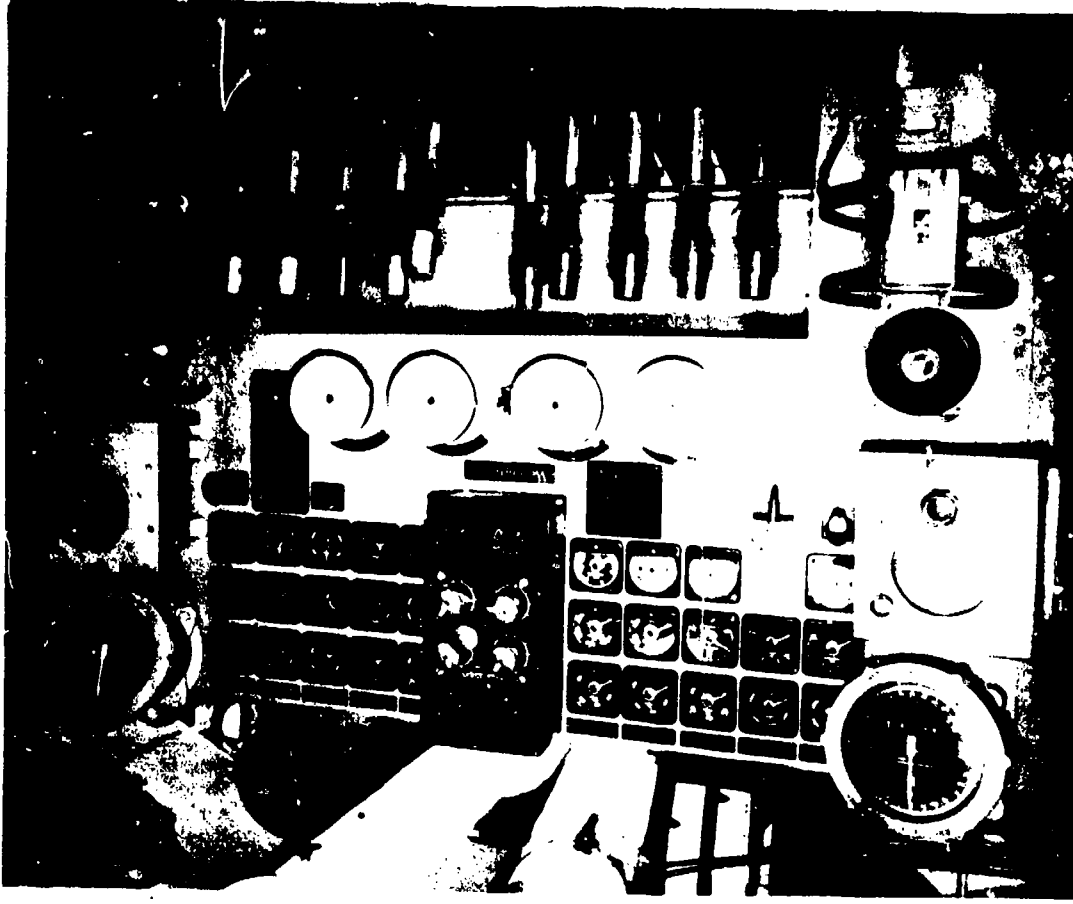
BB-CR-227-513-33. General view of starboard side showing absence of scorched paint as indicated by uniform paint color.

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BA-CR56-33-1. View of main control board showing mounting of special timing relays on both sides on spring steel brackets.

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APPENDIX

COMMANDING OFFICERS REPORT

TEST ABLE

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REPORT #11

COMMANDING OFFICERS REPORT

SECTION I

The U.S.S. PARCHE (SS384) was anchored in the Southwest sector of the array, in berth 198, in 29 fathoms of water, with 105 fathoms of chain to the anchor. The ship was riding to a single anchor. The second anchor originally intended to be placed underfoot, had been removed prior to the test. With this scope of chain out, the PARCHE was bearing about 225° (T) distant 1550 yards from the foremast of the U.S.S. NEVADA.

The PARCHE was in excellent material condition. All propulsion machinery, all auxiliary machinery, and all electronic equipments were in top operating condition. The hull was in a good state of preservation. There were no areas where excessive coats of paint had accumulated. The ability of the ship to resist damage of any special material (especially that of an explosive or inflammable nature) was considered very good. With the exception of the underwater body (very much in need of a dry-docking) the commanding officer considered the PARCHE in as high a state of material readiness as that required during the war.

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SECTION II

There was no damage to material aboard the PARCHE during Test A. The paint on the conning tower fairwater and superstructure (port side only) was blistered. Two locking dogs on one fairwater locker door were ruptured. The ability of this vessel to remain in action and its fighting efficiency were unimpaired in the slightest degree.

There were ten cases of rats below decks. Due to the operating electronic equipments in the Control Room, and one I.C. motor generator in the Maneuvering Room, the excessive temperatures in those compartments caused the rats in those compartments to die. Rats in all other compartments were alive and apparently very active when the PARCHE was reboarded.

The commanding officer makes no attempt to evaluate the effects of an atomic bomb on personnel. However, from a material standpoint, the PARCHE could have remained at sea ready for action for an indefinite period following Test A.

All electronic and fire control equipment was operating during Test A. None of the equipment was damaged during the test due to the bomb or to being operated unattended. Power was supplied from the storage battery through a timing circuit which automatically shut off power after eleven hours had elapsed. The timing circuit functioned properly and shut down after eleven hours. The cumulative hour indicator on the SV radar indicated a full eleven hour period of operation. As additional proof, the scorched side of the SV antennae was facing away from the direction of the center of the blast area upon reboarding.

The commanding officer is proud to report that the fighting efficiency of the PARCHE was not reduced in any way by the atomic bomb in Test A.

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SECTION III

PART A - GENERAL SUMMARY

- I.
 - (a) No change in draft or list. No flooding.
 - (b) No structural damage.
 - (c) The ship was completely operable upon reboarding.
 - (d) There were no fires aboard, either topside or below decks. It is estimated that there would have been no personnel casualties below decks. The commanding officer does not feel qualified to estimate the casualties to personnel in exposed topside positions.

Not one piece of equipment was out of commission.

- II. Forces evidenced and effects noted.

(a) The apparent direction of the heat wave was from the port beam (020° (T) - 040° (T)). The only evidence was the entire port side paint work being blistered. The paint was apparently blistered from a single flash which did not penetrate to any depth. No fires were started.

(b) No fires or explosions took place topside.

(c) There was practically no shock damage. One port side conning tower fairwater locker door was blown in which ruptured two locking dogs. There was no shock damage to other hull structures, machinery, or equipment.

(d) No comment.

- III. Results of Test on Target.

(a) No damage.

(b) No damage.

(c) No damage.

(d) No effect.

(e) No effect on fighting efficiency.

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IV. General Summary.

It is believed that one 500 pound depth charge within five hundred yards would have caused more damage to the PARCHE than the atomic bomb did at from 1500 to 1800 yards. It is believed that the submarine is not vulnerable to an atomic bomb detonated in the atmosphere, unless the bomb is placed very close aboard. An alert submarine would never find itself in that situation.

V. No comment.

SECTION III

PART C - INSPECTION REPORT

SECTION A - HULL

A. General Description of Hull Damage.

- (a) Vessel in excellent overall condition.
- (b) Port side superstructure - paint blistered, caused by initial flash. Two dogs securing fairwater locker door ruptured due to blast effect.
- (c) No flooding.
- (d) No damage.

B. Superstructure and Weather Decks.

No further damage beyond that reported in A.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Tubes and Appurtenances.

No damage.

E. Weather Decks.

No comment.

F. Exterior Hull Above Waterline.

No damage.

The current design of the submarine hull has proved itself again.

G. Compartments.

No damage.

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H. Armor Decks.

None installed.

L. Not applicable.

J. Underwater Hull.

No known damage.

K. Tanks.

No damage.

L. Flooding.

No flooding encountered.

M. Ventilation.

No damage.

N. Ship Control and Fire Control Stations.

No damage. Present design considered excellent.

O. Not applicable.

P. Ammunition Stowage.

No damage.

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

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S. Miscellaneous.

No comment.

S-1. Coverings.

No further comment.

T. Welding and Rivetting.

No damage.

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SECTION III

PART C - INSPECTION REPORT

SECTION B - MACHINERY

A. General Description of Machinery Damage.

No damage.

B. Boilers.

Not applicable.

C. Blowers.

Not applicable.

D. Fuel Oil Equipment.

No damage.

E. Boiler Feedwater Equipment.

Not applicable.

F. Main Propulsion Machinery.

No damage.

G. Reduction Gears.

No damage.

H. Shafting and Bearings.

No damage.

I. Lubrication System.

No damage.

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J. Condensers and Air Ejectors.

No damage.

K. Pumps.

No damage.

L. Auxiliary Generator.

No damage.

M. Propellers.

No damage.

N. Distilling Plant.

No damage.

O. Refrigerating and Air Conditioning Plants.

No damage.

P. Winches, Windlasses, and Capstans.

No damage.

Q. Steering and Diving.

No damage.

R. Not applicable.

S. Ventilation (Machinery).

No damage.

T. Compressed Air Plant.

No damage.

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U. Diesels.

No damage.

V. Piping Systems.

No damage.

W. Hydraulic System.

No damage.

X. Navigational Instruments.

No damage.

Y. Periscopes.

No damage.

Z. Radar and Sonar.

No damage.

AA. Miscellaneous.

No damage.

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SECTION III

PART C - INSPECTION REPORT

SECTION C - ELECTRICAL

A. General Description of Electrical Damage.

- (a) Excellent.
- (b) No damage.
- (c) No damage.
- (d) All electric equipment operable.
- (e) None.

B. Electric Propulsion Rotating Equipment.

No damage.

C. Electric Propulsion Control Equipment.

No damage.

D. Not applicable.

E. Not applicable.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment, and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

No damage.

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J. Portable Batteries.

Not applicable.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage.

M. Searchlights.

No damage.

N. Not applicable.

O. Gyro Compass Equipment.

No damage.

P. Sound Powered Telephones.

No damage.

Q. Ship Service Telephones.

Not applicable.

R. Announcing Systems.

No damage.

S. Telegraphs.

No damage.

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T. Indicating Systems.

No damage.

U. I.C. and A.C.O. Switchboards.

No damage.

V. F.C. Switchboards.

No damage.

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CONFIDENTIAL

SECTION III

PART C - INSPECTION REPORT

SECTION D - ELECTRONICS

A. General Description of Electronics Damage.

- (a) Excellent.
- (b) None.
- (c) No damage.
- (d) All electronic equipment operable.
- (e) None.

B. Fire Control Radar.

No damage.

C. Surface Search Radar.

No damage.

D. Air Search Radar.

No damage.

E. Radar Repeaters.

No damage.

F. Radar Counter Measures Equipment.

No damage.

G. Radar and Radio Beacons.

No damage.

H. IFF Equipment.

No damage.

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I. Communication Transmitters (Radio).

No damage.

J. Communication Receivers (Radio).

No damage.

K. Communication Antennae (Radio).

No damage.

L. Radio Transceivers.

No damage.

M. Sonar Echo Ranging and Listening Equipment.

No damage.

N. Sonar Echo Sounding Equipment and Altimeters.

No damage.

O. Loran Navigation Equipment.

No damage.

P. Power Supplies (Motor Generators and Filters).

No damage.

Q. Not applicable.

R. Test Equipment.

No damage.

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- S. Instrumentation.
No damage reported.
- T. Telephone Equipment.
No damage.
- U. Direction Finders (Radio).
No damage.
- V. Spare Parts.
No damage.

CONFIDENTIAL

Classification (Controlled) (Changed to Security Information
By Authority of JOINT CHIEFS OF STAFF JCS 1785/58 DATED 15 APRIL 1949
By *John H. Reynolds, Lt. Col.* Date *MAY 16 1952*

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ATOMIC ENERGY ACT 1946

CAUTION

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ATOMIC WEAPONS INFORMATION

NOTICE

This document contains atomic weapons information. Distribution is limited to recipients authorized by the Defense Atomic Support Agency (DOD) and/or the Division of Military Application (AEC)



Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

TRC

9 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency (formerly Defense Nuclear Agency) Security Office has reviewed and declassified the following reports:

+ ST-A

AD-366748 -	XRD-65
AD-366747 -	XRD-64
AD-366746 -	XRD-63
AD-376826 -	XRD-60
AD-376824 -	XRD-58
AD-376825 -	XRD-59
AD-376823 -	XRD-57
AD-376822 -	XRD-56
AD-376821 -	XRD-55
AD-366743 -	XRD-54
AD-376820 -	XRD-53
AD-366742 -	XRD-52
AD-366741 -	XRD-51
AD-366740 -	XRD-50-Volume-2
AD-366739 -	XRD-49-Volume-1
AD-366738 -	XRD-48
AD-366737 -	XRD-47

TRC

9 April 1997

SUBJECT: Declassification of Reports

AD-366736 -	XRD-46
AD-366735 -	XRD-45
AD-366723 -	XRD-37
AD-366721 -	XRD-35
AD-366717 -	XRD-31-Volume-2
AD-366716 -	XRD-30-Volume-1
AD-366751 -	XRD-68-Volume-2
AD-366750 -	XRD-67-Volume-1
AD-366752 -	XRD-69
AD-366744 -	XRD-61.

All of the cited reports are now **approved for public release**. Distribution statement "A" now applies.

Arndith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center

Completed
1 mar 2000
B.W.